REMARKS

The Applicants have carefully considered this application in connection with the Examiner's Action mailed February 24, 2004, and respectfully request reconsideration of this application in view of the following remarks.

I. Rejection of Claims under 35 U.S.C. §102

The Examiner has maintained his rejections of Claims 1-4, 6-12 and 19 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. 2002/0136910 to Hacker ("Hacker"). The Applicants disagree.

Claim 1 recites, among other things, "an organic field effect transistor (FET) comprising an active dielectric layer disposed on a substrate . . . ," and also recites, "wherein the active dielectric layer comprises a film of at least one liquid-deposited silsesquioxane precursor . . . ." Similar elements are recited in Claim 19. The Applicants respectfully submit that Hacker fails to teach the active dielectric layer of the present invention.

As pointed out on page 2 of the Specification, an active dielectric layer is a high-dielectric strength material to be used in place of thin films of amorphous SiO_x. As further pointed out of Page 2, Lines 18-22, research relating to the development of high-dielectric strength materials in active components is a distinct field from the development of low-dielectric materials in interconnect insulating layers. These are distinct fields because the processing and performance constraints differ in each case. The current passage and current storage processes of high-dielectric strength materials in active components and low-dielectric materials in interconnect insulating layers are microscopically completely different. (Page 3, Lines 1-3) Insulating layers use materials that block

the passage of electrical charge, whereas high-dielectric strength materials in active components use materials with the ability to store charge. (Page 2, Line 22 to Page 3, Line 1).

Hacker states that he is addressing the problem forming low dielectric constant interlevel dielectrics and protective overcoats at low temperatures to avoid destruction of underlying conductors (para. [0002] and [0004]). Hacker addresses this problem by forming low k dielectric layers or films from alkyl-substituted silsesquionanes (para. [0007]). Moreover, it is apparent that Hacker contemplates using the alkyl-substituted silsesquionanes-derived films to insulate conducting layers and interconnect lines (Para. [0099]-[0100]). Therefore, Hacker does not teach an active dielectric layer.

The Examiner, in responding to the Applicants arguments filed December 1, 2003, cites Para. [0001] of Hacker, where Hacker states that a single microchip may have thousands and even millions of transistors. In this same paragraph, however, Hacker also notes that such devices also have millions of lines in a multilevel metallization system. Hacker further states that thin dielectric films of silicon dioxide are used to reduce the capacitance between functional components of the device.

The Applicants maintain that the proper context of Hacker's invention is directed to the replacement of the silicon dioxide in interdielectric layers or protective overcoats with lower dielectric constant materials, such as alkyl-substituted silsesquionanes-based films. This is done to reduce the RC delay time (Para. [0002]-[0004]), and not for the use of such materials as an active dielectric layer in an organic field effect transistor. In fact, using a lower dielectric constant material to reduce the RC delay time is predicated on the notion that the capacitance (C) of interdielectric layers will be reduced. This is completely opposite to the use of high-dielectric strength materials in active components, where as noted above, the materials should have the ability to store charge.

Moreover, the Applicants find no teaching by Hacker of using his films in an organic field effect transistor. It follows, therefore, that Hacker does not teach an active dielectric layer.

Claims 1 and 19 also recite that the substrate is suitable for an organic FET. The Applicants acknowledge Hacker's statement that his alkyl-substituted silsesquionanes-derived interdielectric layer or protective overcoat could coat a substrate made of glass, metal, plastic, ceramic or the like (para. [0098]). But, given that an organic FET is never dicussed, the Applicants contend that Hacker can not be construed as teaching a substrate that is suitable for an organic FET. Therefore the Applicants submit that Hacker also does not teach this element of Claims 1 or 19.

Therefore, Hacker does not disclose each and every element of the claimed invention and as such, is not an anticipating reference. Because Claims 2-12 are dependent upon Claim 1, Hacker also cannot be an anticipating reference for these Claims. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejections with respect to these Claims.

II. Rejection of Claim 5 Under 35 U.S.C. §103

The Examiner has also maintained his rejection of Claim 5 under 35 U.S.C. §103(a). Specifically, Claim 5 is rejected over Hacker in view of U.S. Patent No. 5,016,982 to Fergason *et al.* ("Fergason").

The Applicants respectfully maintain that the claimed invention is not obvious in view of the foregoing combined references, and that this combination of references fails to establish a *prima facie* case of obviousness of Claim 5.

The combination of Hacker in view of Fergason fails to teach or suggest all of the elements of the invention recited in Claim 5. The Examiner cites Fergason for the proposition of teaching or

suggesting an ITO-coated plastic substrate. However, as noted above, Hacker fails to teach or suggest an organic field effect transistor comprising an active dielectric layer, as recited in Claim 1. As further noted above, Hacker fails to teach a substrate suitable for an organic FET, as recited in Claim 1.

Fergason does not remedy the deficiencies of Hacker, because Fergason is directed to a liquid crystal display (LCD) connected in series with a capacitor (Abstract). The Applicants can find no mention of an organic field effect transistor, or any kind of transistor whatsoever, in Fergason. Thus Fergason does not teach or suggest an organic field effect transistor comprising an active dielectric layer. Moreover, Fergason merely mentions the use of indium-tin oxide electrodes in an LCD having a laminar construction (Column 9, Lines 1-25). The indium-tin oxide can be coated on a sheet of transparent support material, for example poly(ethylene terephthalate) (Mylar) or polyamide (Column 9, Lines 4-8). But there is no teaching or suggestion by Fergason that sheets of transparent support material are suitable substrates for an organic FET as recited in Claim 1 of the present application. The Applicants respectfully submit that the Examiner has improperly used hindsight based on the teachings of the present disclosure to assume that it would be obvious to adapt Fergason's use of ITO-coated transparent support material of Mylar into an organic field effect transistor, but no such motivation for this exists in Fergason itself.

The Applicants also maintain that the asserted combination of Hacker in view of Fergason is an improper combination because there is no motivation to combine these two references. The Examiner indicates that Hacker and Fergason are combinable because they are the same field of endeavor. The Applicants disagree. As noted above, Hacker is concerned with reducing RC delays in multilayer integrated circuits by using low k materials as the interdielectric layer. Fergason, in

contrast, wishes to use LCD's in situations where the available power supplies are at voltages substantially above the LCD's withstand voltage (Column 1, Lines 44-47). The Applicant submit that these are distinct fields of endeavor.

The Examiner further postulates that one of ordinary skill in the art would use a plastic coated with ITO because a plastic substrate is more flexible than a conventional glass substrate and less prone to cracking. The Applicant wish to point out, however, that the use of Mylar coated with ITO comes entirely from Fergason. Fergason makes no mention of having any desire to use a substrate that is flexible or of having any concern with substrate cracking. Moreover, Hacker does not provide any indication that plastic substrates are desirable because they are more flexible or less prone to cracking. As such, the Applicants submit that the Examiner has provided no reason why one of ordinary skill in the art, given the teachings of Hacker and Fergason would be motivated to combine these two references.

Because the combination of the above-cited references fail to teach or suggest all of the elements of the inventions of Claim 1, and are not properly combinable, the Examiner cannot establish a *prima facie* case of obviousness of dependent Claim 5 which includes all the elements of Claim 1. The Applicants therefore respectfully traverse the Examiner's rejection of Claim 5 under 35 U.S.C. §103(a).

III. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a timely Notice of Allowance for Claims 1-12 and 19.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

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